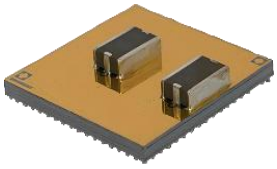
GF35303ME-1323

IF amplification and filtering device, 1.3～2.3GHz

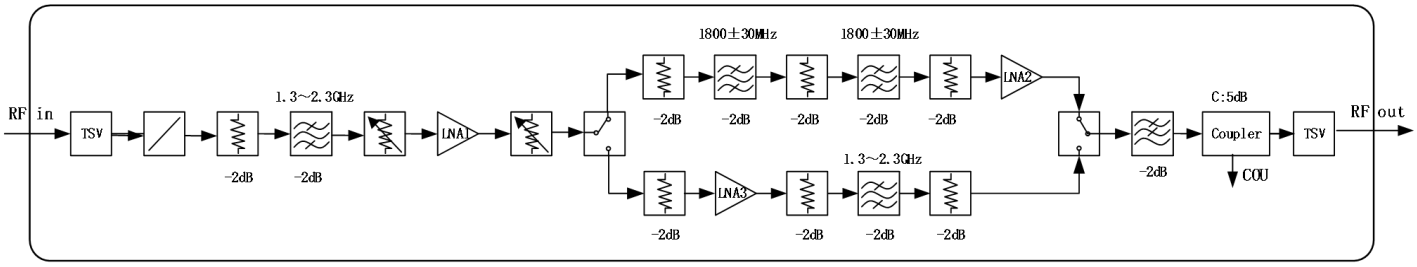
Product Name: IF amplification and filtering device

Model Number: GF35303ME-1323

Outline Dimensions: 16x16x2.25mm



Principle diagram



Product Introduction

The GF35303ME-1323 IF amplification and filtering device integrates equalizer chip, amplifier chip, filter chip, single pole double throw switch chip, digital attenuator chip, etc. It has achieved functions such as numerical control attenuation, amplification, and filtering of intermediate frequency signals. It is manufactured using silicon-based MEMS technology and multi-layer stacking is achieved through wafer bonding. It is housed in a Si-based BGA package, suitable for SMT.

Electrical parameters(TA = +25°C, 50Ω system)

No.	Index	Symbol	Conditions: Room temperature TA=25℃, working voltage ± 5V, max frequency range: 1.3-2.3GHz	Typ.	Unit
1	Gain	G_±30MHz	±30MHz BW	21	dB
2		G_±500MHz	±500MHz BW	23	dB
3	Output P-1	P-1_±30MHz	±30MHz BW	17	dBm
4		P-1_±500MHz	±500MHz BW	17	dBm
5	Bit count	6-bit digital control attenuation			-
6	Attenuation step	0.5			dB
7	Attenuation accuracy	±1			dB
8	Out-of-band rejection	–	±30MHz BW DC～1700MHz，1900～10000MHz	50	dBc
9		–	±500MHz BW DC～1100MHz，2500～10000MHz	40	dBc
10	RF port standing wave	VSWR	-	2.2	-
11	VDD current	I_VDD	-	250	mA
12	VEE current	I_VEE	-	20	mA

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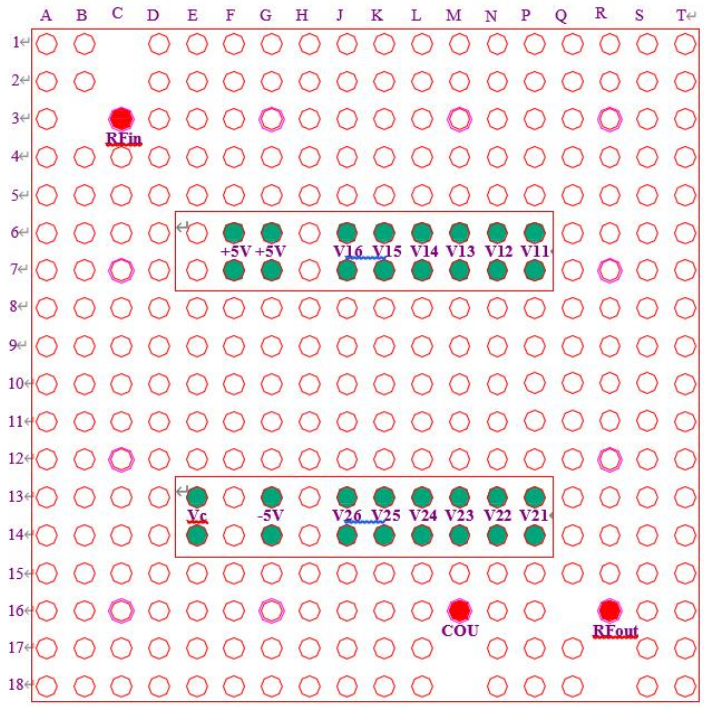
External structure



Pin	Lead out terminal number	Function	Description
1	3C	RFin	RF input port
2	16R	RFout	RF output port
3	16M	COU	Coupling output port
4	6F、6G、7F、7G	VDD	+5V power on port
5	13G、14G	VEE	-5V power on port
6	13E、14E	Vc	Switch control port, 0V: ± 30MHz bandwidth channel, +5V: ± 500MHz bandwidth channel
7	6P、7P	V11	Digital control attenuation 1, 0.5dB
8	6N、7N	V12	Digital control attenuation 1, 1dB
9	6M、7M	V13	Digital control attenuation 1, 2dB
10	6L、7L	V14	Digital control attenuation 1, 4dB
11	6K、7K	V15	Digital control attenuation 1, 8dB
12	6J、7J	V16	Digital control attenuation 1, 16dB
13	13P、14P	V21	Digital control attenuation 2, 0.5dB
14	13N、14N	V22	Digital control attenuation 2, 1dB
15	13M、14M	V23	Digital control attenuation 2, 2dB
16	13L、14L	V24	Digital control attenuation 2, 4dB
17	13K、14K	V25	Digital control attenuation 2, 8dB
18	13J、14J	V26	Digital control attenuation 2, 16dB

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Att1 Truth table						
State	0.5dB	1dB	2dB	4dB	8dB	16dB
	V11	V12	V13	V14	V15	V16
Reference	1	1	1	1	1	1
0.5dB	0	1	1	1	1	1
1dB	1	0	1	1	1	1
2dB	1	1	0	1	1	1
4dB	1	1	1	0	1	1
8dB	1	1	1	1	0	1
16dB	1	1	1	1	1	0
“0” level range: 0～0.8V; “1” Level range: 2.3～5V						

Att2 Truth table						
State	0.5dB	1dB	2dB	4dB	8dB	16dB
	V21	V22	V23	V24	V25	V26
Reference	1	1	1	1	1	1
0.5dB	0	1	1	1	1	1
1dB	1	0	1	1	1	1
2dB	1	1	0	1	1	1
4dB	1	1	1	0	1	1
8dB	1	1	1	1	0	1
16dB	1	1	1	1	1	0
“0” level range: 0～0.8V; “1” Level range: 2.3～5V						

Notice

- The diameter of the BGA shot is 0.4mm;
- Anti static measures are taken during the assembly process of product use;
- The product needs to be assembled and used in a purified environment, and it is prohibited to use liquid cleaning agents to clean the module;
- Long term stable operation of the product requires airtight conditions;
- The module must be placed in a container with electrostatic protection function and stored in a nitrogen environment;
- Please use a vacuum chuck or precision pointed tweezers to retrieve the module. During the operation, avoid touching the surface of the module with tools or fingers;
- The chip should be installed on a substrate with a thermal expansion coefficient equivalent to that of silicon (2.9ppm/℃), and the thermal expansion coefficient of the substrate should be ≤ ppm/℃.